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CROUP—TRACHEOTOMY—RECOVERY.

[Reported to the Boston Society for Medical Improvement, and communicated for the Boston Medical and Surgical Journal.]

BY GEORGE HAYWARD, JR., M.D.

I WAS called, Feb. 11th, to see a male infant 14 months old, who, it was thought, had shown some symptoms of croup. The child was an uncommonly large and strong one, and appeared to be perfectly well, the evening previous, but during the night the mother thought that his breathing was peculiar, and, after watching it some time, that it had a croupy sound. An emetic of ipecac was immediately given, which operated thoroughly, bringing up a good deal of mucus, after which the child seemed to be relieved, slept well, and in the morning appeared to be so well that the parents hesitated to send for me. When I saw him, there was no lymph on the tonsils, he was free from fever, pulse and respiration were good, and it was only by making him cry that anything like a croupy sound could be heard. I directed the room to be kept as full as possible of the steam of hot water, a powder containing one grain of calomel and two of ipecac to be given then, in the afternoon, and at night, and an expectorant mixture to be given freely through the day. I saw him again in the evening, and found that he had had a very comfortable day, the breathing having been for the most part, as was reported, quite natural. I remained with him some time, but was unable to hear any sound like croup; pulse and respiration were good, there was no lymph on the tonsils, and had it not been for the alarm of the previous night, and the insidious nature of the disorder, I should have felt very little anxiety about him. During the night of Feb. 11th, the symptoms of croup returned, and were not relieved by emetics of ipecac, which were administered and operated thoroughly. I saw him early on the morning of the 12th; at that time the croupy breathing, although not constant, was decided, his pulse was quickened, and there was a slight mucous râle in both backs, but there was no lymph on the tonsils, and his color was perfectly natural. Dr. Hayward, Sen., saw him in consultation with me about 8½, A.M. (when he presented the appearances described above), and recommended giving him a third of a grain of calomel and one grain of Dover's powder every three hours.

I stated to the parents my wish that tracheotomy should be performed as soon as the symptoms required it, as I was satisfied it would be the best course to pursue, if the remedies then being tried failed to relieve the child; and that, to be effectual, it must be done early. They left the matter in my hands, and I accordingly saw Dr. Cabot, and agreed with him to meet me in consultation on the case at 4, P.M., but to hold himself in readiness to perform the operation at any time, should circumstances render it advisable. We also agreed to make an application to the epiglottis, with a sponge probang, of a solution of nitrate of silver, in the proportion of a drachm to the ounce.

I saw the child at 11, A.M. and 1, P.M., at which times he remained much as he had been in the morning; the breathing only occasionally croupy, and the color perfectly natural. At 2½, P.M., they sent, as I had directed, to inform me that the breathing was more difficult, and I went immediately there, calling on my way for Dr. Cabot. We found no false membrane on the tonsils, but respiration was much more difficult than when I left him, the croupy sound being constant, and there was a decided appearance of lividity of the skin. Under these circumstances, we thought that tracheotomy should no longer be delayed, and it was accordingly performed by Dr. C., and the double silver tube inserted at about 3, P.M., the patient having first been completely etherized.

Very little blood was lost during the operation, the breathing soon became easy, and the skin assumed its natural appearance. We directed that the inner tube should be taken out and carefully cleaned every hour, that fifteen drops of a solution of nitrate of silver (℈i. to ℥i.) should be injected through it every three hours, and that a teaspoonful of the following mixture should be given every two hours: R. Potassæ hydriod., ℈ij.; syr. tolu., aquæ, each ℥iijss. The steam was directed to be kept up constantly, as before.

Towards evening, I again met Dr. Cabot, who continued to attend the case with me until the child was out of danger. We found our patient pretty comfortable, except that he was a good deal troubled with a thick, viscid mucus, which obstructed the trachea, apparently just below the end of the tube; this was best removed by passing a small feather, taken from the inside of the wing of a goose, through the tube, and then twisting it around, and thus entangling the mucus in it and bringing it up. Beef-tea was directed to be given freely through the night, and the same treatment to be continued. This course was continued for several days, the patient being seen by me every few hours, night and day, excepting that the injections of nitrate of silver were not given so often as before, injections of a few drops of cold water being sometimes used instead, by which means, frequently, portions of hardened mucus, and occasionally small pieces of false membrane, were coughed up; the hydriod. potassæ was also sometimes omitted. The only change of any consequence for the first week was that the child, who was teething, was very much troubled with diarrhœa; and arrow-root, and brandy and milk were frequently given it instead of beef-tea, and enemas of starch and laudanum administered.

About Feb. 20th, there were some symptoms of pneumonia in the upper part of the right lung; these continued, until there was distinct dulness on percussion, in the upper and middle part of the right lung, and, after a few days, in the upper part of the left lung also. Auscultation was rendered difficult by the sound caused by breathing through the tube being transmitted through the lung, but fine crepitous râles were occasionally heard, both by Dr. Cabot and myself. Mild sinapisms were used occasionally, and flannels wet with warm brandy were kept constantly on both chests; but very little treatment could be adopted in so young a child.

The outer tube was provided with an oval opening on its upper part, communicating with the trachea, and various attempts were made at different times, by removing the inner tube and closing the external opening, to ascertain whether the upper part of the trachea was sufficiently pervious to allow the air to pass through it, but it was not until Feb. 25th, thirteen days after the insertion of the tube, that it was thought safe to remove it altogether. No inconvenience followed the removal of the tube, the respiration being perfectly free through the trachea. On the next day, Feb. 26th, the child seemed, in the afternoon, without any apparent cause, to be very much exhausted and almost in a moribund condition, so much as to require frequent support from brandy and water, &c., but on Feb. 27th he began to improve, and from that time continued to get better, the pneumonia gradually disappearing, until he entirely recovered; the opening in the trachea closing entirely March 10th.

I have thought this case worth reporting at some length, as it seems to give evidence additional to that already adduced, of the importance of an early operation in cases of membranous croup; and because I believe it is very rare for a patient to have recovered from that disorder when it has been followed by pneumonia of both lungs.

THE PAROTID GLAND.

BY J. C. BRADBURY, M.D., OLDTOWN, MAINE.

[Communicated for the Boston Medical and Surgical Journal.]

From the high organization and complex relations of this gland, we should expect to find it the frequent seat of disease; but the united testimony of the most experienced surgeons has proved the truth to be quite otherwise—in other words, that disease of this organ is exceedingly rare; far more so than is to be accounted for, upon anatomical or physiological principles; as if "He that tempers the winds to the shorn lamb," mindful of its fearful relations, and the difficulty of surgical access to it, had especially interposed some invisible and almost insuperable defence to protect it from disease and the perils of surgical interference.

Most of the older surgeons, among whom were Boyer, Allan Burns, Richerand, and others of equal distinction, both in this country and Europe, were disbelievers in the practicability of the removal of this gland; and it is comparatively recently that we have had warm discussions, relative to its possibility, among the most distinguished surgeons, even since it has been several times successfully removed. Many of your readers will doubtless recollect something of the spirited controversy that arose some years since between Profs. G. of the Pennsylvania University and P. of the Jefferson School of Philadelphia, relative to this subject. Prof. P. was *sure the operation could be, and had been, done successfully.* Prof. G. was *quite as certain it never had been, and never could be, done.* As I was spending a season in Philadelphia, soon after this occurrence, I was told there were strong hostile feelings existing between the two distinguished Professors, which grew out of the above controversy, and which I suspect were never compromised, as Prof. P. had left Philadelphia for the New York University. While in Philadelphia at this time, I purchased, among other volumes, at auction, from the library of a physician who was about leaving the city, a copy of Prof. G.'s work on "Surgery," which is still in my possession; and on a blank leaf of the second volume I find, as a quotation from a lecture of Prof. G. to his class (written, as I supposed, by a student, or some one attending his lectures), the following decisive denunciation of this operation:—"*Therefore, in spite of Scotch assurance, and English arrogance, and Irish impudence, and French politeness, and Yankee impertinence, the parotid gland never has been, and never can be, completely removed by the knife.*"

This emphatic declaration sufficiently indicates the spirit of the controversy, and the assurance of Prof. G. that he was prepared to defend his position against a considerable portion of the world. Whether Prof. G. is still of the same opinion, I have no means of knowing; but certain it is, that since then there has been sufficient testimony to reverse his decision; and as it may be well to avail ourselves of the moral lessons strown in our paths, let us remember, that when we differ from those who have opportunities and capacities for judging equal to our own, such a difference is, at least, circumstantial evidence of the possibility that we are in the wrong.

It is not surprising, that the anatomist who contemplates the location and complicated relations of this gland, only in its normal state, with the external carotid and jugular vein passing through its substance, and sending off numerous and important branches, in its course through the gland, traversed also, as it is, by the facial and temporal nerves, and crowded between and wrapped about the numerous and inaccessible muscles, the neck of the condyle, internal ligaments and articulation of the lower jaw, and in close proximity to the internal carotid artery, jugular vein, pharynx, pneumogastric, glosso-pharyngeal and spinal nerves; and shut almost from view and reach, by its anterior boundaries, the ramus of the jaw, mastoid process, mastoid muscle and external auditory meatus—I say it is not surprising that he should have come to the conclusion that its extirpation was impracticable. But those surgeons who have been driven to the extreme alternative of attempting its removal, and who have consequently learned more of its pathology, have noticed, as observed by Dr. Randolph, that in a diseased condition its capsular investments have been found contracted to such a degree as to cause deep-seated and irregular prolongations so far to recede from their inaccessible positions, as to render its removal practicable.

In a note to Cooper's Surgical Dictionary, Dr. Reese awards the merit of having first removed this gland to Prof. Samuel White, formerly of Hudson, N. Y., in 1808. Yet, Dr. John C. Warren speaks of his father having done the operation as early as 1804, although he did not tie the external carotid. M. Beclard performed the operation in 1823, and Prof. McLellan in 1826. The operation has been done many times since; but the long catalogue of tumors, that have been removed from the parotid region, supposed to have involved the gland, and reported accordingly, are believed to have been tumors made up of diseased lymphatic glands and their adjacent tissues, which, by pressure upon the carotid, have occasioned its absorption, till tumors, originally superficial, have been by their external coverings pressed partially, or quite, into the parotid cavity; and as they carry before them all the important relations of the carotid, and have none of their own, their extirpation is attended with no risk or difficulty; hence we account for those operations unattended with hæmorrhage, and requiring the ligature of no important arteries, and not followed by paralysis of the muscles of the face.

There has been a diversity of opinion, relative to the propriety of tying the external carotid, as a preparatory step to the removal of the parotid. As this artery passes through the gland, I see no way of avoiding its division, when the whole gland is diseased, and is to be removed; and it therefore must be tied either before or during the operation. This being admitted, I see no adequate reason for doubting the expediency, where the extirpation of a parotid tumor, that is known to involve the gland, is to be attempted, of doing this before the operation; the liability to abundant and possibly fatal hæmorrhage, is in that way avoided.

I am aware that there are one or two instances where, it is said, experienced surgeons have removed the gland, leaving the trunk of the artery undivided. In such instances, it is probable that that portion of the gland about the artery was not diseased. Dr. Warren has observed that this is sometimes the case. But all, I think, are agreed in the universal necessity of dividing all the branches of the artery above its entrance into the gland; and there can be but little difference, physiologically, between obliterating all the branches, and the main trunk, a few lines below.

In several instances, have the lives of patients been eminently perilled, in the hands of the most distinguished operators, by the accidental division of the carotid, and even of its branches. Mr. Carmichael came near losing his patient, by hæmorrhage from the trunk of the facial artery; pressure upon the carotid was not sufficient to control the torrent. M. Beclard had a dangerous hæmorrhage from either the external carotid, or one of its branches close to the trunk—which, was not determined. Our late distinguished and veteran surgeon, Dr. John C. Warren, accidentally divided the trunk of the external carotid, which deluged the wall, operator and assistants with blood. And in these instances, a good deal of difficulty was experienced in securing the vessels, owing to their retracting to positions difficult of access, and the intervention of the tumor between the operator and the vessel.

It has been thought, by some, that the vessels of the parotid have, in certain instances, been so completely obliterated by disease, as to permit its removal without hæmorrhage or the ligation of its arteries. If this has ever been so, it has been exceedingly rare, and must be too doubtful a contingency for any practical reliance.

The following case appears to me to illustrate a very good method of proceeding, where there is doubt whether the gland be involved in the disease.

Mrs. G., a married woman, of about 40, of plethoric and corpulent habit, had a swelling which suddenly appeared in the parotid region, some eight years previous to its removal, and which was supposed to be the *mumps;* contrary to expectation, however, it did not wholly subside, but became chronic, and remained stationary for several years; for the last two years, it increased in size with considerable rapidity, assumed a conical form, became painful, and the patient grew anxious as to the consequences. Constitutional and local treatment was unsuccessfully tried, for a time, to bring about, if possible, its resolution. Several physicians advised its removal by an operation. As I had observed the development of the disease from its commencement, and supposed it to involve the parotid, I dreaded so formidable an operation, both as regarded myself and my patient, and did not encourage it, till urgent symptoms and the frequent solicitations of the patient no longer left excuse for delay.

The tumor—extending anteriorly from the zygomatic process, downwards, over the masseter muscle and angle of the lower jaw, and posteriorly, from the mastoid process of the temporal bone, downwards, over and under the mastoid muscle some four inches, crowding upwards the external auditory meatus, and somewhat backwards the mastoid muscle—was, by the advice and assistance of Drs. Allen and Samuel Bradbury, removed in this wise.

An incision was made from the root of the zygomatic process, downwards, in the course of the external carotid artery, about four inches; a second, from a point about half an inch below, and a little posterior to the mastoid process, obliquely downwards and inwards across the centre of the first, about three inches in length, across the angle of the lower jaw. The flaps being dissected up, most of the exterior surface of the tumor was exposed to view. The attempt was now made to dissect up the anterior portion of the tumor, but it being very vascular, and the anterior portion of the gland being involved, it was concluded, after tying several arteries, to reserve this part of the dissection until the last, when the hæmorrhage could be better controlled; therefore, that portion of the tumor lying over, and attached to, and around the mastoid muscle, was dissected up; when it was found that the tumor occupied the parotid cavity, and involved the deep portion of the gland. Now, having no confidence that the gland could be wholly removed without a division of the external carotid, to avoid further hæmorrhage and that useless process of tying all its branches and the trunk at last, the first incision of the integuments was extended so far below the boundary of the tumor and over the carotid, as to permit dissection to the artery below the boundary of the tumor, when it was tied with a double ligature, and divided between its branches. After this, the tumor was, by a cautious and slow dissection, completely removed, without further hæmorrhage or difficulty of importance.

After the removal of the tumor, the boundaries of the parotid cavity were entirely exposed, and also most of the relations of the tumor. That portion of the carotid above its division was found passing through the substance of the tumor, with the ligature attached to it. The large cavity was dressed from the bottom, and was filled by granulations with considerable rapidity; some eight or ten weeks elapsed, however, before the wound was completely healed. As was to be expected, considerable paralysis of the muscles of the side of the face succeeded the operation; but it is to be hoped that in time the efforts of nature will remove this deformity, as it has done in some other cases.

The superficial portion of the tumor was found to be composed of condensed, cellular tissue, interspersed with enlarged and indurated lymphatics. The deeper structure had the granulated appearance, indurated, but indicative of its primitive structure; but the very internal portion was of a *medullary consistency*, which facilitated its removal, leaving, however, some apprehensions in regard to the result. But now, some fourteen months have passed, and there have been no symptoms, either local or constitutional, of a threatening or suspicious character, and the patient is quite well.

TREATMENT OF NEURALGIA BY SUBCUTANEOUS INJECTION.

BY A. RUPPANER, M.D., BOSTON.

[Concluded from p. 247.]

CASE VII.—*Neuralgia of Twenty Years' standing, seated in the Pes Anserinus of the Portio Dura of the seventh, or facial Nerve, and the third union of the Portio Dura with the Trifacial; Injection at the Temporo-Maxillary point; relief.*

THE following case was placed in my hands by my esteemed friend, George Bartlett, M.D., of this city, in October, 1859.

Mrs. ———, of Boston, widow, 48 years old, mother of three children, of nervo-sanguineous temperament, has been subject to neuralgia for the last twenty-six years. Her father was healthy; but her mother, who is still alive, and 74 years old, suffered from early youth, for many years, from the same complaint. Her two sisters have never had neuralgia. She has been delicate and sickly from childhood, but has never been subject to rheumatism, or any kindred malady.

Twenty-six years ago the patient experienced, for the first time, a very severe paroxysm of pain in the superior maxillary and malar bone, without being able to assign any cause for it. It thence travelled upwards to the vertex, never crossing the median line, but now and then a sudden, sharp pain would dart down the left side of the face. It continued generally from one to three or five days, and then would be superseded by a severe nervous headache, occurring about once in a fortnight, continuing for three days without abating, and leaving her, at the end of that period, in an extremely exhausted condition. Had some teeth extracted in the hope of getting relief, but all in vain. About six months ago, the pain changed its seat suddenly, and appeared at a point directly in front of the right ear, where the portio dura of the facial gives off its ascending, transverse and descending branches. Since that time, the neuralgia has been entirely confined to the ear itself, and a small space in front and behind it. Complains of a constant noise going on within the ear—similar to the humming of a swarm of bees—which keeps her awake all night. Her general health has suffered much within the last few years; her appetite, however, is good, and the digestive functions are in tolerably good condition.

As every possible remedy had been perseveringly tried with only temporary relief, on taking charge of the patient I tried at once *subcutaneous injection.*

Oct. 11th, 9, P.M.—Suffers excruciating pain in and about the ear. I injected ten drops of the solution between *the temporo-maxillary and the auriculo-temporal point.* Experienced a little nausea. After ten minutes she felt more comfortable, and almost free from pain. Noise in the ear still perceptible and annoying.

Oct. 12th, 9, A.M.—Patient had a comfortable night. Complains of no pain, and declares she had never tried any thing which gave her such prompt relief. Feels weak and nervous. R. Infus. gentianæ, ℥ iii.; extr. valerian., fl ℥ i. M. Sumat. coch., amp. ter in die.

14th, 9½, P.M.—Patient sent for me. Has great pain in and around the ear. Injected fifteen drops of the strong solution at the auriculo-temporal point, with decided relief to the pain. She slept for an hour, and was then troubled with nausea.

15th.—Passed the night free from pain. Ordered her to try, in case the pain should return, the valerianate of ammonia.

16th.—No pain. Pulse weak. Advised her to drink wine.

17th, 18th, and 19th.—Had one of her periodical headaches, but no pain in or about the ear.

21st. Has some pain, but not violent. Injected once more as before. Slept well that night.

Nov. 14th.—The patient to-day is free from pain. The noise in the ear has not returned. Persevered in taking tonics, and particularly Rhine wine, with her principal meal; her general health has in consequence much improved. Appetite good; strength returning. I have seen this patient a number of times since the above date, and find her doing well, continuing free from pain.

CASE VIII.—*Sciatica of three and a half years' standing; Injection in the course of the Sciatic Nerve; relief.*

Mrs. ——, aged 26 years, of nervous temperament, but strong constitution, aborted some six years ago. Since that time her health has been impaired. About a year after the above mentioned event, she was treated for prolapsus uteri by the most eminent physicians, but never recovered her former health. Three years ago, she was attacked with severe pain in the right sciatic nerve, starting from the ilium and shooting down the thigh to the knee. The least damp, cold or wet weather, the wearing of thin stockings and shoes, excitement of any kind, or a long walk, would bring on a paroxysm. Warmth and friction generally relieves the pain. In November, 1859, this lady consulted me in regard to her sciatica. Examination revealed tenderness of the whole right hip, and a distinct painful point was felt upon pressure, near the posterior superior spinous process of the ilium, and another farther down, a little below the middle of the thigh.

I had previously advised her to apply ten leeches in the course of the sciatic nerve, to be followed promptly and assiduously by warm fomentations, and Dover's powder, in five grain doses, once or twice during the night. An active cathartic was also given, and followed by good effects.

Nov. 22d.—Pain returned with much exasperation, being very severe and lancinating in the middle of the thigh and around the head of the fibula. I introduced the syringe at the painful point in the middle of the thigh, this point not being larger than a three-cent piece, and ten drops of the narcotic solution were injected without any pain, only producing a slight smarting at the seat of the puncture. In a little more than an hour the pain ceased and the patient fell into a sound sleep. Slept for more than two hours, and, on awaking, declared herself free from pain.

The state of this patient's general health required considerable attention. She is now much better than before, but still far from being well. She has also had two slight returns of the sciatica, owing chiefly to her own imprudence in exposing herself to a cold and damp atmosphere in the evening. At her own request, she has been treated by opiate injections twice, with decided benefit. Continues doing well; has, however, now and then, slight attacks of pain.

CASE IX.—*Case of Rheumatic Neuralgia of four years' standing; Injection at the Supra-Orbital Point; use of the Valerianate of Ammonia and Tonics; partial relief.*

January 18th, 1860, I was requested to see Mrs. ——, of Boston; mother of five children, of feeble constitution, inclined to consumption, and of a very nervous temperament. For about ten years she has been subject to rheumatism, and is still a victim to it. This malady first attacked her knees, next the articulations of the forearms and fingers. Her family is subject to the same affection. Her heart has never been affected by the disease. Pulse 78. Lungs not in a good condition. Suffers much from sore throat. In fact, ask her what you please, and she will have some complaint or other to make.

About four years ago she was attacked with severe neuralgic pain over the left eye, which at times disappeared and again returned with increased violence. Being very careless in regard to her health, even trying to indulge in the pleasure of skating, and shunning no weather in the evening when the occasion offered, she often suffered from an aggravation of the pain.

I directed my attention first to her general health. In case of pain I tried, with tolerable success, valerianate of ammonia; at other times, the valerianate of zinc, with hyoscyamus, in the form of pills, and vegetable bitters were also given. Having laid down strict rules as to her manner of living, and particularly as to her leaving the house, &c., I had the satisfaction of seeing this patient's health improved, and her pain mitigated.

Feb. 3d.—The pain over the eye is more severe than ever. Pressure at the supra-orbital foramen gives great pain. I injected at the *supra-orbital* point, therefore, ten drops of the usual solution. In a few minutes patient was nauseated. Felt like an intoxicated person. This feeling soon passed off, and she declared herself free from pain. A little œdema at the point of injection, but no rash.

4th.—Is very comfortable. Feels weak and without energy. Continues the tonic treatment.

9th.—Sent for me in the night. Had severe pain in the left temple and over the eye. Had been out in a rain, to a party, the evening before, notwithstanding my directions to the contrary. Upon examination, pressure pointed still to the supra-orbital point as the proper place for the injection. I introduced eight drops of solution No. 4, with good effect. Pain soon ceased. No nausea or vomiting followed the injection.

5th.—Rested well the whole night. Is free from pain. Directed her to continue the tonic treatment.

From the above date to the present, my patient has had but little pain, except in damp and unpleasant weather. Uses still the valerianate, in solution and in pills, with good results.

Five other cases have come under my observation, besides the nine already detailed, but I shall report for the present only the above, and give the history and result of the remaining at some future day.

In no case have I observed any injurious effects to follow the operation, although in most cases I have injected more than once, and in some at more than six different times. In those not unfrequent cases where the disease has a *central*, not a *centripetal* origin, I maintain that the treatment is quite useless, except in giving momentary relief to the suffering patient. In two cases, the puncture was, in a few minutes, surrounded by a blush of urticaria.

Lastly, I shall briefly consider the *modus operandi* of this new method of applying remedial agents.

But let me here state, plainly and unreservedly, that I approach this question of the *modus operandi* with great diffidence. I have no new principles or discoveries in the domain of physiology to advance. All I claim is, to bring into notice those facts scattered through the best works of our modern physiologists, bearing upon this point. These theories, supported by facts, have been collected by Prof. Wood in his little treatise already quoted by me, and this question of the modus operandi has been discussed by him at some length. I have repeatedly and carefully studied the treatise of Dr. Wood. I have sought for and read the authors quoted by him, with reference to this question. I shall therefore do little else than chiefly to restate *his* principal arguments. I may not always quote him literally, and shall incorporate, when necessary, extracts from the authors quoted by him. The reader will judge, from the actual cases given in these researches, how far the principles laid down by physiologists are borne out by actual experiments and the treatment of the disease known as neuralgia.

Our point of inquiry is, then, have we any means of introducing medicinal agents very rapidly into the body, in a situation where they will not be readily decomposed, and where, in certain cases, we can secure at once their *local* and their *remote effects?*

In neuralgia we have usually a *general* and a *local* affection, a morbid state of the system, arising from many causes, displaying various symptoms, requiring varied treatment, and existing in states of the body the most opposite; a local affection, occurring in paroxysms of violent pain, either regular or irregular, following, like the electric current, the course of the affected nerve, ceasing, either to be suspended for a time, or immediately to recur with still more unbearable violence. An affection presenting characters such as have been described, would appear to demand at once a local and a general treatment; a *local treatment* intended to mitigate the fearful anguish, under which the patient is well nigh driven to despair; a *general treatment* intended to correct the "habitus neuralgicus" on which it depends, and having reference to the causes from which it has arisen, the state of the system in which it exists, and the diseases with which it may be associated.*

Let us first consider the *local treatment and its effect.* Many circumstances in the history of neuralgia seem to point at, and give peculiar facilities to, local treatment. All observers admit that the *superficial* nerves are of all others the most liable to the disease. Hence various methods of applying narcotic and other remedies more directly to the seat of the disease have been introduced. Prof. Wood classifies them thus:

1st. *The enepidermic method*, in which the agent is simply applied to the surface of the skin.

2d. *The iatraleptic method,* in which the absorbents are stimulated by friction to take up the agents which are presented to them in solution or in a minute state of division.

3d. *The endermic method,* proposed by MM. Lembert and Lesieur, in which the obstacle which the epidermis offers to the entrance of the remedy is overcome by previously removing it.

4th. *Inoculation,* which, largely practised for the introduction of smallpox and cowpox into the system, has been proposed by M.

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* **Wood on Neuralgia, p. 19.**

Lefergue St. Emilion, to be extended so as to secure the application of remedies. Dr. Bureaud* does not seem to have been very successful in the application of inoculation with morphine. It was also found, by M. Martin Solon, that the effect produced was very much the same, whether the patient was inoculated with belladonna, or strychnia, or gastric juice, or chyme.†

5th. There ought to be added the plan of local treatment proposed by M. Valleix,‡ which consists in the application of a succession of small blisters over the points in the course of the nerves which are painful on pressure. In all his cases it seemed to alleviate the symptoms. This plan of blistering is not new, but for the application of it to the tender points we are indebted to M. Valleix. He has clearly shown that some points in the course of the nerve are more liable to be affected than others, and that these points are frequently the very ones where the nerve is most superficial. Moreover, these points can in most cases be detected in the course of the disease by their extreme tenderness on pressure. Even in the intervals between the paroxysms, very slight pressure on these points is sufficient in many cases to excite severe suffering, although, in some exceptional cases, firm pressure may be applied without causing any complaint. We are therefore greatly indebted to M. Valleix for the immense improvement in practice, by showing where our local treatment, whatever that may be, ought to be applied. Dr. Wood's own experience has not confirmed the value of simple blisters, and he prefers following them up by the endermic application of morphia. Two strong objections are, however, raised by Dr. Wood against the blistering, or the endermic application of narcotics in this disease—first, the painful nature of the remedy; and, secondly, the mark which it often leaves, which is very objectionable, particularly when the disease is seated in the nerves of the face.§

Thus it is evident that we were still in want of a method of directly applying sedatives to the affected part: but such a method has been suggested by Prof. Wood, and supported by many successful experiments; a method which is almost painless, and calculated not only to diminish the local pain, but, at the same time, powerfully and rapidly to affect the general system.

Moreover, the experiments instituted by Müller‖ clearly show that, to quote his own words, "narcotic poisons, when applied locally to nerves, have only a local effect." "I held," he continues, "the nerve of a frog's leg, which was separated from the body in a watery solution of opium, for a short time, and that portion of the nerve lost its irritability, but below the part that the poison had touched, the nerve still retained this function; *opium, therefore,*

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* Lancet, 1837, p. 826.

† Bullet. de l'Acad. Roy. de Med., 1836.

‡ Traité des Névralgies, ou Affections Douloureuses des Nerfs; par L. L. S. Valleix. Paris, 1841.

§ Wood on Neuralgia, pp. 19–20.

‖ Muller's Physiology, by Baly, vol. i., p. 246.

produces a change in the nervous matter itself, but the influence is local."

The advantages, therefore, secured by this mode of administering narcotics and sedatives are:

1st. A local effect, produced *directly* upon the affected nerve.

2d. A remote effect, ensuing almost *instantaneously,* on the application of the remedial agents.

The first of the above propositions is amply proved by the almost immediate cessation of the pain after the opiate was injected, in all the cases reported by Dr. Wood and many other experimenters, as well as by the cases which I have myself given, and others which have come under my observation. The acute and agonizing pain may, in some cases, have returned, as indeed it did in most of my own, yet still the pain was mitigated and subsided for a time, after the injection, and in some it never returned.

In regard to the second proposition—the remote effect produced by the injection—it is well known that opiates, administered through the ordinary channels, are usually some hours in taking effect; whilst most of the cases which I detailed show with what rapidity narcotics take effect when introduced into the system in this manner. In one case, the patient felt as if she was seasick; in another, immediately after the injection, a drowsy state followed, and the patient saw beautiful visions; a third could not describe her feelings, it was a sort of crawling sensation all over the body, and so on. In a case where Dr. Wood tried injection, the man, who was not at all aware of what was being done, told him that he felt as if he was drunk within a few minutes after the introduction of the narcotic.

We are now led to the second point of our inquiry, namely, *how is this remote effect produced?*

Medicines, remarks Dr. Wood, page 14, when exhibited, have usually two effects:—1st, *the local effect or topical*—the particular effect of a medicine on the tissue to which it is applied; 2d, *the remote effects*—being physical, chemical or vital changes, produced on parts at a distance from those to which the medicine is directly applied, or on the system at large.

The manner in which the local effect is produced is comparatively simple, and depends on the relation of the medicine to the tissue to which it is applied. Thus some applications simply stimulate or irritate the tissue, the effect varying from the least powerful, which merely redden, to the strongest, which produce ulceration, or even gangrene. Others, again, form compounds with the elements of the tissue, thus chemically decomposing or corroding it; while a third class, according to Dr. Christison,* "neither corrode or irritate, but *make a peculiar impression on the sentient extremities of the nerves, unaccompanied by any visible change of structure.*"

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* Christison, Treatise on Poisons, p. 1.

Considerable difference of opinion prevails, continues Prof. Wood, as to the manner in which the remote effects are produced. Magendie[*] and his supporters contended strongly that they were conveyed by absorption from the part to which they are first applied, while Messrs. Morgan and Addison[†] are of opinion that the remote effects are exclusively due to sympathy, or an impression transmitted through the nerves. Other observers, however, among whom may be mentioned Sir Benjamin Brodie and Dr. Christison, unable to adopt either view exclusively, admit this double mode of operation; "a conclusion," which Messrs. Morgan and Addison agree, "that all fair analogy forbids; because it is contrary to Nature's rule," they say, "to adopt two ways of attaining the same end." Absorption is admitted, by all European and American authors, to be the most usual channel by means of which medicinal agents are conveyed from the part to which they are directly applied, so as to affect remote organs, or the system at large. The principal agents by which absorption is effected are *the veins,* though the lacteals and absorbents take up certain agents, but their operation is both limited and slow. Much depends upon the absorbent power of different tissues. M. Vernière[‡] has shown that the mucous membrane of the intestinal canal absorbs less rapidly than the serous membranes, and they, in their turn, are less powerful channels of absorption than a vein or an open wound.

Hence this difference of the absorbent power of different tissues must modify to a great extent the action of remedies. Thus, the stomach and intestines, which are the tissues to which medicines are generally applied, possess a considerable power of absorption, as we might expect from their office; nevertheless, we find, from the experiments of Christison[§] and Coindet,[‖] that when oxalic acid is introduced under the same circumstances into the stomach of one dog and the peritoneum of another, the dose may be so apportioned that the amount which does not prove fatal to the former kills the latter in fourteen minutes. M. Ségalas found, that half a grain of the solution of extract of nux vomica, injected into the windpipe, proved fatal; while two grains might be injected into the stomach, peritoneum or chest, without any fatal effect, thus showing the power of absorption of the pulmonary membrane.

The skin, which has at various times been employed as a medium for the introduction of medicines into the system, would appear to possess no very active power of absorption, at least, unless it be denuded of its cuticle. "Accordingly," says Dr. Christison,[¶] "many active poisons are quite inert when applied to the unbroken skin, or even to the skin deprived of its cuticle. Hydrocyanic acid, perhaps the most subtle of all poisons, was found by Coullon to have no effect when dropped on the skin of a dog." On the other hand, Dr. Madden, in his work on Cutaneous Absorption,[*] has shown, from carefully-conducted experiments, the power which the healthy skin possesses of absorbing from a gaseous and from an aqueous medium, and has collected, from various authors, proofs of its power to absorb medicinal substances. Both solids and fluids have been thus absorbed by the skin. Kellie found salivation follow the use of mercurial plaster. Arsenic employed to destroy lice, has been known to produce violent inflammation. Salivation has been produced by the absorption of a solution of corrosive sublimate. Iodine has been detected by Dr. Wadden in his urine, after immersing his hands in a solution of hydriodate of potassa, and he also succeeded in purging himself, by applying to his skin infusions of rhubarb, jalap and gamboge. "Some poisons," says Dr. Christison, "which act slowly through the stomach, cause instant death when injected into a vein."

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[*] Magendie, Annales de Chimie et de Physique.

[†] Essay on the Operation of Poisonous Agents, &c.

[‡] Journal des Progres, 1827.

[§] Christison on Poisons, p. 29.

[‖] Journal des Progres.

[¶] On Poisons, p. 29.

With regard to the cellular tissue, the same author further states:—"that it is a ready medium for introducing poisons into the blood, especially if an artificial cavity be made where the tissue is loose, but that its power as a medium of absorption has not been, and cannot easily be ascertained. On the one hand, it is difficult to apply poisons to it, without also applying them to the mouths of divided vessels; and, on the other hand, it is difficult to make a set of experiments for comparison with others, on the stomach, pleura or peritoneum, as the cellular tissue does not form an expanded cavity, and consequently the extent of surface to which a poison is applied cannot be made the same in each experiment of a series."[†] Sir Benjamin Brodie reported in the Philosophical Transactions of 1811–12, some experiments which approach the most nearly to direct injection of the cellular tissue, in which experiments various poisons were introduced into wounds, and were found to produce very speedy results; but in all these cases, the great division of parts exposed so many blood-vessels, that it is not easy to say how much of the effect was due to the cellular tissue, and how much to the action of the divided vessels.

The preceding, being quoted from Prof. Wood's Treatise, he adds:—"I am at present engaged in some experiments on this subject, in which, by means of an improved apparatus, various substances have been introduced into the cellular tissue with comparatively little injury to the adjacent vessels, and, as far as these have gone, they would lead to our ascribing great absorbent power to the cellular tissue."[‡] What has been stated proves satisfactorily:—

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[*] Edinburgh, 1838.

[†] Christison on Poisons, p. 30.

[‡] I know that Prof. Wood is at present engaged in writing a treatise on the subject of Neuralgia, and I have no doubt, when all his experiments and cases are given to the profession, with reference to subcutaneous injection particularly, he will throw much light on the subject, and the book, being not only of practical value, will also be a most valuable addition to medical literature.

1st. That medicines are more rapidly absorbed by some tissues than by others.

2d. That the stomach is by no means the most rapid way of introducing medicines into the system.

3d. That the cellular tissue has a great power of absorption.

From the cases which I have submitted at some length in this paper, I think it may be safe to arrive at the following important conclusions, with which Prof. Wood concludes his consideration of the *modus operandi*.

1st. That narcotics, injected into the neighborhood of the painful point of a nerve affected with neuralgia, will diminish the sensibility of that nerve, and, in proportion, diminish or remove pain.

2d. That the effect of narcotics, so applied, is not confined to their local action, but that they reach the brain through the venous circulation, and there produce their remote effects.

3d. That in all probability what is true in regard to narcotics, would be found to be true in regard to other classes of remedies.

4th. That the small syringe affords a safe, easy, and almost painless method of exhibition.

5th. That, destitute as we are of any precise experiments as to the applicability of the cellular tissue as a medium for the reception of medicinal agents, the experiments made with the syringe show that it seems to offer an excellent surface for the operation of the absorbent action of the venous system.

6th. That the method now detailed seems as extensively applicable as any of the methods of applying remedies to the skin, whether enepidermic, iatraleptic, endermic, or by inoculation.

Finally, the above conclusions, arrived at after the considerations of the *modus operandi*, may not be entirely satisfactory and conclusive to some of the readers of this paper. Such, however, need not be apprised of the existence of many phenomena presenting themselves in health, and particularly in disease, the causes of which cannot be ascertained. Too often we have, indeed, to content ourselves with the maxim of Cicero—"*Sufficit si quid fiat intelligamus, etiamsi quomodo quidque fiat ignoramus.*"

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON: THURSDAY, MAY 3, 1860.

Tracheotomy in Croup.—In view of the success that has attended tracheotomy in several cases of croup that have recently occurred in this vicinity, one of which is reported in the Journal of this week, it is interesting to note similar encouraging results in many of the late foreign journals, and to find that the prejudice which has existed against an operation that has been the means of saving life in so many instances, is diminishing under the increasing light of advancing surgical knowledge.

In the November and February numbers of the *Edinburgh Medical and Surgical Journal* is an able paper on this subject, by Dr. Conway Evans, illustrated by several interesting cases, in which the writer briefly sets forth the arguments in favor of the operation, and also answers the most common objections which have been urged against its performance.

The slowness with which this method of treatment has been adopted is quite naturally attributable to the great opposition to it hitherto manifested by the highest authorities in England and this country, as well as to the ill success with which it has been so often attended. But the remarks of Dr. Evans are so clear and forcible, and the results of late have differed so widely from what we should have expected from the opinions that have been so often expressed, that we are almost led to the conviction that a new era is dawning in the history of this fearful disease.

Among the arguments adduced by Dr. E. is, first, the high death rate in this disease, the mortality amounting, so far as can be determined, to at least one half, and, according to some authorities, to two thirds of the patients attacked. As death in most cases is from suffocation, Dr. E. infers, in view of a fundamental principle in medicine which suggests any rational treatment whose object is to combat the tendency to death, that there are good grounds for questioning the correctness of the opinion that the operation is unjustifiable.

The favorable results that have followed the operation, not only in England but in France, results that have been equally remarkable in our own country, Dr. E. regards as having an important bearing upon this question. It may be here stated that out of 14 cases of tracheotomy reported by Dr. Voss in the *New York Journal of Medicine*, 5 recovered. We might also allude to the recoveries that have taken place after the operation in our own immediate vicinity. In the February number of the Edinburgh Journal, Mr. Spence reports 13 cases operated upon by himself in the last suffocative stage, in 6 of which, life was saved.

Dr. Evans is inclined to urge an early resort to the operation, as tending to prevent the fatal issue in a larger number of cases, counteracting, as it must, the certain effects of the slow carbonization of the blood which otherwise takes place, and by which asphyxia as certainly follows, as when produced by the croupy exudation. This, it will be remembered, is the course advocated by Dr. Gay, of this city, in whose hands the operation has proved peculiarly successful. He remarks that in this vicinity death has been, so far as has been ascertained, mainly owing, in most instances, to the operation being too long deferred. Dr. S. L. Bigelow, of Paris, in a late communication on diphtheria, remarks of Dr. G. that he has "*said* the best, and *done* the best of any living man, not even Trousseau, in regard to the question of the proper time to operate, and the proper treatment to pursue after performing tracheotomy in membranous croup—he operates early."

Mr. Spence considers it an error to suppose that this operation prevents the extension of the membrane downwards, hence he thinks it hardly warrantable till after the usual remedies have been actively tried, and no other chance remains; "then," he says, "there should be no delay."

In answer to one of the more common objections urged against the operation, that of the danger induced of pneumonia or bronchitis, by the introduction of air into the lungs not properly warmed or moistened, Dr. E. suggests that this may in a great measure be obviated by observing more than ordinary care in the after treatment; by modifying the condition of the air, by its being caused to pass through flannel, which should occasionally be wrung out in hot water, and by keeping the patient in an equable temperature. and free from all depressing remedies. He remarks in reference to this accident, that he is not, however, by any means certain that what is called pneumonia is not often an extension of the croupy exudation, and in no way dependent upon the operation.

The treatment subsequent to the operation, it is now agreed by all, is of the first importance. The greatest care should be observed lest any obstruction should occur to free respiration through the tube, and all depressing agents, particularly antimony, should be avoided. Mr. Spence remarks that although in many cases it is necessary to give wine and beef-tea from the first, he generally prefers a nutrient, non-stimulating diet for the first day or two, afterwards giving animal food.

One advantage of the operation, as remarked by Dr. Gay, is that it gives greater facilities for acting through the opening in the trachea, directly upon the disease, even when this exists in the bronchi. Hence the injection of a solution of nitrate of silver, recommended and employed with such marked effect.

The results of tracheotomy, then, as reported by our own and foreign surgeons, within a few years past, certainly afford a striking contrast to those which formerly attended its performance, and encourage the belief that a remedy is always at hand, which, with all the precautions enjoined, much diminish the terrors of this fatal disease.

RAW MEAT IN CHRONIC DYSENTERY.—A letter from Dr. Willis, relating the following case, was sent by mail to this JOURNAL for publication some weeks since, and by mistake reached the *Daily Journal* office in this city, in which paper it was printed. Its Editor has politely apologized for the mistake, so far as he is concerned, and we now gladly do our part to set the matter right by inserting the case in the pages for which it was originally written:—

The patient was a child eighteen months of age. He was one year old when first attacked with dysentery. He was eleven months when weaned; immediately after weaning, he began to decline. I was first called to see him September 17th, 1859. I found him very much emaciated, and unable to help himself much, with skin so shrivelled that he appeared like a little old man. His abdomen was protuberant, and presented all the symptoms of tabes mesenterica, which appeared to follow as the sequel to muco-enteritis. His appetite was capricious; and what little he did eat, was either undigested in its passage or vomited. There was diarrhœa, with frequent discharges of pus and blood, attended with feverishness and atrophy. Hard and irregular lumps were perceptible in the abdomen. Various remedies, which are usually recommended in like cases, were tried, but with very little benefit. As a last resort, I ordered him to have the pulp of raw beef, as suggested by Dr. Weisse. He took one teaspoonful of the pulp once in four hours. It set well on the stomach, and the patient soon began to improve in strength and flesh. The dejections diminished in number, and became more healthy. This was the only treatment, with the exception of Dover's powders and McMunn's elixir of opium. For some time the stomach would not bear any other diet; but the last time I saw him, Jan. 24th, 1860, he was able to eat the same food as did the family. He has become very fond of the raw beef, and weighs many pounds more than when I first called to see him. He acts lively and appears quite healthy. After the stomach became able to bear it, I gave cod-liver oil, and the syrup of phosphates twice a day.

Royalston, April, 1860. I. P. WILLIS.

THE PENINSULAR AND INDEPENDENT MEDICAL JOURNAL.—This periodical has, for the last two years, been published in Detroit, Mich., as a union of two medical journals which were previously published separately in that city. It is hereafter to be discontinued—the valedictory of its senior editor, Prof. A. B. Palmer, appearing in the last number. The cause given by the publishers for the discontinuance of the work, is that "the outlay the past year has been so much larger than the receipts."

BOYLSTON PRIZES.—The prizes of the Boylston Medical Society for 1860 were recently awarded as follows:—To essay on Bright's Disease, by Robert T. Edes, a prize of fifteen dollars. To essay on Diphtheritis, by W. B. Gibson, a prize of fifteen dollars.

WORCESTER NORTH DISTRICT MEDICAL SOCIETY.—At the second annual meeting of this Society, held in Fitchburg, April 14th, the following officers were chosen:—*President*, Dr. J. A. Marshall, of Fitchburg. *Vice President*, Dr. Alvah Godding, Winchendon. *Secretary and Librarian*, Dr. James R. Wellman, Fitchburg. *Treasurer*, Dr. T. R. Boutelle, Fitchburg. *Censors*, Drs. A. Hitchcock, Fitchburg; A. Miller, Ashburnham; J. A. White, Baldwinville; E. J.

Sawyer, Gardner; C. Warner, Westminster. *Councillors*, Drs. A. Godding, Winchendon; I. P. Willis, Royalston; J. A. Marshall, Fitchburg; L. French, Ashby. *Delegates to the National Medical Convention*, Drs. A. Godding, Winchendon; J. O. Parker, Shirley; I. P. Willis, Royalston; J. A. Marshall, Fitchburg.

J. R. WELLMAN, *Secretary*.

Fitchburg, April 17, 1860.

BALTIMORE COLLEGE OF DENTAL SURGERY.—At the twentieth annual commencement of this institution, held in February, the degree of Doctor of Dental Surgery was conferred on 39 young gentlemen. Dr. Bond delivered the valedictory address. A prize offered by Dr. Mallet, of Connecticut, was awarded to Geo. C. De Marini for a thesis on "The Salivary Glands." The class, during the last session, numbered 70 students, and was the largest which has ever attended any course at the school.

APPOINTMENT.—Dr. Edward Warren, of Edenton, N. C., Editor of the North Carolina Journal of Medicine, has been appointed to the chair of Materia Medica and Therapeutics, in the University of Maryland, at Baltimore.

A NATIONAL Hospital for the Paralyzed and Epileptic, under the guidance of Dr. Brown-Séquard, has been established in London, and is now open for the reception of patients.——The Royal College of Physicians, London, have lately resolved, unanimously, that a bust or picture of the late Dr. Bright be placed within the College in honor of his memory, at the expense of the College.——Of the sixty members of the lately elected Municipal Council of Genoa, Italy, six are medical men.——Dr. Edw. F. G. Percy relates, in the London *Lancet*, two cases of the successful treatment of scarlatina by an injection, every three hours, of the aromatic spirit of ammonia, one teaspoonful in an ounce of warm water.

VITAL STATISTICS OF BOSTON.

FOR THE WEEK ENDING SATURDAY, APRIL 28th, 1860.

DEATHS.

	Males.	*Females*	*Total.*
Deaths during the week,	43	42	85
Average Mortality of the corresponding weeks of the ten years, 1850–1860,	36.9	36.6	73.5
Average corrected to increased population,	..	..	84
Deaths of persons above 90,	..	..	..

Mortality from Prevailing Diseases.

Consumption.	Croup.	Scarlet Fever.	Pneumonia.	Measles.	Smallpox.
17	3	3	5	3	4

METEOROLOGY.

From Observations taken at the Cambridge Observatory.

Mean height of Barometer,	29.930	Highest point of Thermometer,	65
Highest point of Barometer,	30.328	Lowest point of Thermometer,	33
Lowest point of Barometer,	29.712	General direction of Wind,	Northerly.
Mean Temperature,	46.81	Whole am't of Rain in the week	0.000 in.

PAMPHLETS RECEIVED.—Proceedings of the Medical Profession at Baltimore in relation to the Deaths of Drs. Charles Frick and Ferwick B. Smith, of the University of Maryland.—Dental Anomalies, and their Influence upon the Production of Diseases of the Maxillary Bones. (From Jones & White, Philadelphia)—Annual Report of the Pennsylvania Hospital for the Insane.—An Essay on Diphtheria, by Dr. D. Wooster, of San Francisco, Cal.—The Silver Wire in Ununited Fracture; and a Case of Ligamentous Union successfully treated—by E. K. Sanborn, M.D.—Introductory Lecture, by Prof. Wm. Sweetser, before the Medical Class of Bowdoin College, Me.

DIED,—At Fort Hamilton, N. Y., Dr. Joseph Eaton, U. S. A., 75 years, 7 months, 22 days.

Deaths in Boston for the week ending Saturday noon, April 28th, 85 Males, 43—Females, 42.—Accident, 3—apoplexy, 3—inflammation of the bowels, 1—disease of the brain, 1—inflammation of the brain, 1—burns, 1—cancer, 2—consumption, 17—convulsions, 2—croup, 3—cyanosis, 1—diabetes, 1—dropsy, 3—dropsy in the head, 3—drowned, 1—debility, 1—infantile diseases, 6—puerperal disease, 1—emphysema, 1—epilepsy, 1—scarlet fever, 3—disease of the heart, 1—hæmorrhage, 1—intemperance, 1—inflammation of the lungs, 5—congestion of the lungs, 1—disease of the liver, 1—marasmus, 2—measles, 3—premature birth, 1—smallpox, 4—suffocated (by swallowing a bean), 1—teething, 2—tumor, 1—unknown, 5.

Under 5 years, 34—between 5 and 20 years, 8—between 20 and 40 years, 24—between 40 and 60 years, 13—above 60 years, 6. Born in the United States, 66—Ireland, 25—other places, 4.